

## OBSERVATIONS ON THE NUMBER OF YOUNG OF THE LASIURINE BATS.

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There is a very general belief that the number of young produced at a birth by bats is usually one, or at most two, so that a recent writer<sup>a</sup> says: "Such an occurrence as four young in a bat is, I believe, unheard of;" and rather doubts the correctness of the observations of an experienced collector who recorded an adult female of *Lasiurus borealis salinae* with that number of young.

While the rule for most bats is one or sometimes two offspring at parturition, yet a careful examination of material and the literature shows the number of young produced at a time by members of the genus *Lasiurus* and probably *Dasypterus* is usually double that number. This might safely be inferred from the fact that four mammae are found in bats of this group, as has been noted by several writers.<sup>b</sup> In all other bats, so far as the writer is aware, there are two mammae, each of which is placed near the middle of the outer border of the pectoral muscle. In the Lasiurine bats, in addition to these two, there is a second pair, located more posteriorly, each mamma of which is nearer the back and pretty well up under the wing. (See fig. 3, Plate XVII.)

As to the number of young in *Lasiurus*, Professor Wilder found three embryos in each of two specimens of *L. borealis* from Massachusetts. Dr. Harrison Allen<sup>c</sup> refers to two embryos of *L. borealis* as twins. An examination of the material in the U. S. National Museum gives the following results: A pregnant female of *Lasiurus blossevillei* from Paraguay (No. 105631) shows on dissection three well-developed fetuses, each with its own membranes and placenta. There are also in alcohol three embryos from the same locality (Nos. 105636-8), which the collector, Mr. W. T. Foster, says were taken

<sup>a</sup> Oldfield Thomas, Ann. Mag. Nat. Hist., 7th ser., IX, April, 1902, p. 238.

<sup>b</sup> Wilder, Popular Science Monthly, VII, 1875, p. 652. Merriam, Mammals of the Adirondacks, Trans. Linn. Soc., New York, II, 1886, p. 81. Miller, North American Fauna, No. 13, October 16, 1897, pp. 105, 115.

<sup>c</sup> Contrib. Zool. Lab. Univ. Penn., I, 1895, No. 2, p. 22.

from No. 105586, an adult female of *L. blossevilleti*. The embryos are all united by shreds of membranes and uterus, so that there is no doubt they came from one parent. A specimen of *L. borealis* from Illinois (No. 14273), preserved in alcohol contains two fetuses.

The most interesting specimens in this connection are Nos. 114044-48, an adult female nursing four young, brought into the National Museum alive by Mr. J. C. Lawson, of Washington, District of Columbia, on June 18, 1902. Photographs of the living family were secured shortly before the mother's death and are reproduced in Plate XVII. A young one was at each of the adult's nipples, where it held on with great tenacity, having in its mouth a good deal of its mother's hair into which its hooked milk teeth firmly caught. As Dobson has suggested, it is probably for the purpose of holding securely to their mothers that the milk teeth of bats differ in form from those of other mammals.

The following table shows the weights (taken while living) and sizes of the family. It is seen that the young ones were less than a third grown as to weight and about half grown as to linear measurements. The combined weights of the four young amounted to 12.7 grams, while the mother weighed but 11 grams.

Mother and young of *Lasiurus borealis*.

Description.	Weight.	Length, body.	Tail.	Forearm.
	Grams.	mm.	mm.	mm.
114044, adult female . . . .	11.0	58	48	41
114045, young female . . . .	3.5	34	18	22
114046, young female . . . .	3.5	33	18	22
114047, young female . . . .	3.0	33	16	20
114048, young male . . . . .	2.7	34	18	21

No direct observations have as yet been made on the breeding of *Lasiurus cinereus* and *Dasypterus intermedius*, and there are no examples of pregnant females of these bats in the National Museum collection, but it seems safe to predict that when the right material is obtained and good observations made it will be found that the females of these species bring forth as many young at a birth as do those of the *Lasiurus borealis* group.

#### EXPLANATION OF PLATE XVII.

All the figures are reproduced from photographs taken by Mr. Dodge, of the department of photography.

Fig. 1. *Lasiurus borealis*, from Washington, District of Columbia, mother with four young (Nos. 114044-48) photographed while alive, lying on her back. The intermembral membrane is held out to prevent her from partly covering the young with it. About seven-eighths natural size.

Fig. 2. The same, mother with the four young attached hanging from a twig. About three-fourths natural size.

Fig. 3. *Dasypterus intermedius*, adult female in alcohol (No. 59533), showing the two mammae of the left side. The hair has evidently been worn away from around the nipples by nursing young. About five-sixths natural size.